ence-in-difference method was used to estimate changes in fracture rates two years before and after ZOL or OBP initiation. Generalized estimating equation models were used to test the hypothesis of differential changes in fracture rates between ZOL and OBP users, controlling for age, gender, treatment (ZOL vs. OBP), and time (pre-period vs. follow-up period). **RESULTS:** A total of 3,102 ZOL and 36,961 OBP users met the study criteria. Over the two-year follow-up, ZOL users experienced a significant reduction in fracture rates compared to the two-year prior to ZOL (13.4% vs. 11.2%; $p=0.008$) while fracture rates significantly increased for OBP users (9.0% vs. 9.5%; $p=0.019$). Multivariate regression estimated that the probability of experiencing any fracture decreased by 1.97% between pre- and follow up period for ZOL users ($p=0.004$), increased by 0.46% for OBP users ($p=0.001$), and the difference-in-difference effect was 2.43%, suggesting that ZOL users experienced a significant decrease in fracture rates relative to OBP users ($p<0.001$). **CONCLUSIONS:** This is the first comparative analysis evaluating fracture rates two years before and two years after the initiation of ZOL and OBP. Use of ZOL significantly reduced fracture rates, compared with the use of OBP.

PMS4

COMPARATIVE ANALYSIS BETWEEN COSTS AND CLINICAL RESPONSE OF BIOLOGIC DRUGS FOR THE TREATMENT OF RHEUMATOID ARTHRITIS (RA)

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OBJECTIVES: To evaluate costs and clinical response of different treatments with biologic drugs for rheumatoid arthritis. **METHODS:** The study was designed as a prospective cohort. A sample of 15 patients was selected for analysis. Selection criteria: patients with RA with moderate to severe disease activity, failure to treatment with DMARDS and no previous use of anti-TNF drugs. The following parameters were considered in the calculation of direct costs: average doses, treatment duration, number of doses received and cost per milligram (mg) of each drug. The clinical outcome evaluated was DAS 28 at day zero and at 160 days. The criteria considered for low activity of disease was DAS 28 ≤ 3.2 and for remission DAS 28 ≤ 2.6. **RESULTS:** Among the 15 patients included, the average age was 45 years, 33% were men, with average BMI of 25.81kg/m2, 73% with disease duration above 5 years, and average duration of treatment with DMARDs of 2.27 years. Among these, 3 patients were treated with Adalimumab (average dose: 40mg; R$75.13/mg; 6 doses); 3 with Etanercept (average dose: 50mg; R$28.28/mg; 15 doses) and 9 with Infliximab (average dose: 201mg; R$30.77/mg; 4 infusions). The average follow-up time was 16 weeks. Adalimumab resulted in an average cost of R$18031.41 with a 63% reduction in DAS 28 (2.03), presenting remission criteria. The average cost with Etanercept was R$21,209.55 with a 3% reduction in DAS 28 (5.31). Infliximab resulted in an average cost of R$ 24,766.11 with a reduction of 26% in DAS 28 (3.23) presenting criteria for low activity of disease. **CONCLUSIONS:** The first line treatment of patients with moderate to severe RA with Adalimumab presented the best clinical response in 160 days, achieving criteria for disease remission at the lowest treatment cost. The treatment with Etanercept resulted in the worst relation between cost and clinical response.

PMS5

DATA VISUALIZATION OF TREATMENT PATTERNS OF MEDICARE PSORIATIC ARTHRITIS PATIENTS WHO INITIATE TUMOR NECROSIS FACTOR THERAPY

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OBJECTIVES: Outcomes research methodologies need to advance and allow access by various disciplines as clinicians, epidemiologists, economists, and statisticians interact frequently. A data visualization tool can help present complex patterns more effectively to a diverse audience. **METHODS:** Patients over 65, with at least one diagnosis for PsA were selected for this study, using the 100% national Medicare data with Part D information. We identified patients who initiated therapy with tumor necrosis factor (TNF) and non-TNF treatments. For 2 years after biologic initiation, the following treatment patterns were examined: switching to another TNF, switching to a non-TNF, and discontinuation. We created a data visualization tool using a processing language to show how patient treatment patterns change after the first and second drug switches. **RESULTS:** A total of 2921 patients initiated PsA therapy with a TNF agent. 6.44% of these patients switched to another TNF, 2.43% switched to a non-TNF, 51.11% discontinued therapy and 40.02% continued their initial therapy. Among patients who switched to another TNF, 50.53% remained on the switched therapy, 30.85% discontinued therapy, 18.09% switched to another TNF, and 0.53% switched to a non-TNF. In 2 years after TNF initiation, 11.76% of patients made a second switch from their initial TNF to a third TNF while 64.71% continued their second switched drug, 23.53% discontinued the second switched TNF and no patients switched to a non-TNF. **CONCLUSIONS:** It can be difficult to present treatment patterns, especially when analyzing subsequent years and switches. Data visualization tools can help present these complicated flows effectively to a diverse health outcomes research audience.

PMS6

TREATMENT PATTERN VISUALIZATION OF MEDICARE PATIENTS DIAGNOSED WITH RHEUMATOID ARTHRITIS AND INITIATING TUMOR NECROSIS FACTOR THERAPY

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OBJECTIVES: In recent years, methodologies used in outcomes research have advanced. In a field where different disciplines interact frequently, a tool to communicate information clearly and effectively through graphical means has become a necessity. Using data visualization techniques, we present treatment patterns of patients diagnosed with rheumatoid arthritis (RA). **METHODS:** Using the 100% national Medicare data with Part D information, patients who are over age 65 and have had 2 diagnoses for RA at least 60 days apart were selected for the study. We identified patients who initiated therapy with tumor necrosis factor (TNF) agents. For 2 years after the initiation of TNF, we examined treatment patterns such as switching to another TNF, switching to a non-TNF, and drug discontinuation. Using a processing language, we created a data visualization tool to illustrate changes in treatment patterns after first, second and the third switches. **RESULTS:** A total of 50,455 RA patients initiated therapy with a TNF. 4.37% of these patients switched to another TNF, 5.81% switched to a non-TNF, 61.52% discontinued therapy and 28.31% continued their initial therapy. Among patients who switched to another TNF, 37.36% remained on the switched therapy, 46.71% discontinued, 8.40% switched to another TNF, and 7.54% switched to a non-TNF. In 2 years after TNF initiation, 7.03% of patients who switched twice after the initial TNF switched a third time to another TNF, while 51.35% continued their second switched drug, 35.68% discontinued their second switched TNF, and 5.95% switched to a non-TNF. **CONCLUSIONS:** Treatment patterns can be difficult to present, especially if they were analyzed for subsequent years and switches. Data visualization tools can assist researchers in the effective presentation of these complicated flows.

PMS7

DEPRESSION TREATMENT PATTERNS AMONG INDIVIDUALS WITH ARTHRITIS

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OBJECTIVES: To examine the patterns of depression treatment among individuals with arthritis and depression by demographic, socioeconomic, access to care, health status and lifestyle risk factors. **METHODS:** We used a cross-sectional design. Our data source was the 2008 annual release of Medical Expenditures Panel Survey (MEPS). Individuals with self-reported arthritis were identified from medical conditions and household files. Presence of depression was captured from medical conditions file. The study sample consisted of 947 adults with arthritis and depression. Unadjusted group differences in depression treatment patterns among individuals with arthritis and depression were analyzed using Chi-square tests. Multinomial logistic regressions were used to examine the relationship between depression treatment and demographic, socioeconomic, access to care, health status and lifestyle risk factors. All analysis accounted for complex survey design of MEPS. **RESULTS:** Overall, 20% of individuals with arthritis and depression had no depression treatment, 56% used antidepressants only and 24% used psychotherapy with or without antidepressants. After controlling for all other independent variables, we found that compared to whites, African Americans (AOR=0.37) and Latinos (AOR=0.28) were significantly less likely to use antidepressants only. Individuals with middle income (AOR=0.32) were significantly less likely to receive psychotherapy with or without antidepressants, than individuals with high income. **CONCLUSIONS:** One in every five individuals with both arthritis and depression did not have any treatment for depression. Racial and socio-economic disparities in depression treatment were found. Further research is required to explore that whether lack of depression treatment results in poor health outcomes related to arthritis among individuals with arthritis and depression.

PMS8

ESTIMATING INCIDENCE AND PREVALENCE OF OSTEOARTHRITIS (OA) IN ALBERTA USING ADMINISTRATIVE CLAIMS DATA

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OBJECTIVES: OA is a highly prevalent disease with significant economic implications. With increased aging and obesity, the incidence and prevalence of OA is expected to continually rise, resulting in higher utilization of health resources. As part of a systems dynamic modelling research programme to inform OA care planning in Alberta, we used provincial administrative data to estimate OA prevalence and incidence and examined the sensitivity of estimates to different OA case definitions. **METHODS:** We obtained Alberta Health and Wellness (AHW) Discharge Abstract (DAD), Physician Claims (Claims) and Ambulatory Care Classification System (ACCS) databases from 1994 to 2010with ICD-9 and ICD-10 OA diagnosis codes (715 and M15-19 codes) identified in any field. In the base case, OA incidence and prevalence was captured for patients documented with this diagnosis who had at least two physician OA visits within two years. **RESULTS:** The incidence and prevalence of OA in 2008 were estimated at 7.5 cases/1000 population and 87 cases/1000 population, respectively. OA prevalence was most affected by run-in time (number of years of data), followed by the number of physician visits used to define OA, the number of years between cases, and the databases applied in the analysis. Over 15 years, prevalence approaches steady-state. Physician Claims data captured most (98%) of the OA cases. **CONCLUSIONS:** Administrative data have limitations but are the only routinely collected population level source for these estimates. The key factors that impact incidence and prevalence estimates for chronic diseases, like OA, is the number of years of historical data and number of visits used in the case definition. These estimates most likely underestimate OA prevalence, but likely capture clinically relevant disease for which patients seek care. The value of these data for health authorities is to allow for better prediction of demand for planning future health services.